

WHAT IS CLAIMED IS:

1. A system for modeling communication networks, comprising:

a memory operable to store configuration data for a plurality of network types, the configuration data associating each network type with components, connections, and rules for connecting the components using the connections;

5 a processing module coupled to the memory and operable to allow a user to select one of the network types and to design a communication network using the components and connections associated with the selected network type according to the configuration data.

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2. The system of Claim 1, wherein the processing module is further operable to determine whether a mode operation corresponding to a network type is activated and to allow a user to design a communication network of that network type if the corresponding mode of operation is activated.

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3. The system of Claim 1, wherein the processing module is further operable to allow the user to select one of the components associated with the network type, to display a node to represent the selected component in the communication network, and to associate equipment with the selected component.

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4. The system of Claim 1, wherein the processing module is further operable to allow the user to select one of the connections associated with the network type, to connect two components using the selected connection according to the rules associated with the network type, and to display a connection line between two nodes to represent the connection between the two components.

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5. The system of Claim 1, wherein the rules associated with the network type indicate a maximum number of connections between one component and other components.

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6. The system of Claim 1, wherein:

the configuration data associates the network type with a hierarchy of connectors; and

5 the processing module is further operable to allow a user to assign subordinate connectors to a connection according to the configuration data associated with the network type.

7. The system of Claim 1, wherein the processing module is further operable to validate the user's communication network to ensure compliance with the 10 rules associated with the network type according to the configuration data.

8. The system of Claim 1, wherein the processing module is further operable to provision some of the communication network by communicating 15 instructions to some components.

9. The system of Claim 1, wherein the processing module comprises software instructions for modeling a generic communication network and interfaces with configuration data for specific types of networks.

20 10. The system of Claim 1, wherein the configuration data associates the components with component properties and associates the connections with connection properties.

11. A method of modeling communication networks, comprising:  
storing configuration data for a plurality of network types, the configuration  
data associating each network type with components, connections, and rules for  
connecting the components using the connections;  
5 receiving a user selection for one of the network types; and  
designing a communication network using the components and connections  
associated with the selected network type according to the configuration data.

12. The method of Claim 11, further comprising:  
10 determining whether a mode operation corresponding to a network type is  
activated; and  
designing a communication network of that network type if the corresponding  
mode of operation is activated.

15 13. The method of Claim 11, further comprising:  
receiving a user selection for one of the components associated with the  
network type;  
displaying a node to represent the selected component in the communication  
network; and  
20 associating equipment with the selected component.

14. The method of Claim 11, further comprising:  
receiving a user selection for one of the connections associated with the  
network type;  
25 connecting two components using the selected connection according to the  
rules associated with the network type; and  
displaying a connection line between two nodes to represent the connection  
between the two components.

15. The method of Claim 11, wherein the rules associated with the network type indicate a maximum number of connections between one component and other components.

5 16. The method of Claim 11, wherein:

the configuration data associates the network type with a hierarchy of connectors; and

designing the communication network further comprises assigning subordinate connectors to a connection according to the configuration data associated with the network type.

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17. The method of Claim 11, further comprising validating the communication network to ensure compliance with the rules associated with the network type according to the configuration data.

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18. The method of Claim 11, further comprising provisioning some of the communication network by communicating instructions to some components.

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19. The method of Claim 11, wherein designing the communication network further comprises interfacing software instructions for modeling a generic communication network with configuration data for specific types of networks.

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20. The method of Claim 11, wherein the configuration data associates the components with component properties and associates the connections with connection properties.

21. Network modeling software embodied in a computer-readable medium and operable to perform the following steps:

5        storing configuration data for a plurality of network types, the configuration data associating each network type with components, connections, and rules for connecting the components using the connections;

      receiving a user selection for one of the network types; and

      designing a communication network using the components and connections associated with the selected network type according to the configuration data.

10        22. The network modeling software of Claim 21, further operable to perform the steps of:

      determining whether a mode operation corresponding to a network type is activated; and

15        23. The network modeling software of Claim 21, further operable to perform the steps of:

20        24. The network modeling software of Claim 21, further operable to receive a user selection for one of the components associated with the network type;

      displaying a node to represent the selected component in the communication network; and

      associating equipment with the selected component.

24. The network modeling software of Claim 21, further operable to perform the steps of:

receiving a user selection for one of the connections associated with the network type;

5 connecting two components using the selected connection according to the rules associated with the network type; and

displaying a connection line between two nodes to represent the connection between the two components.

10 25. The network modeling software of Claim 21, wherein the rules associated with the network type indicate a maximum number of connections between one component and other components.

15 26. The network modeling software of Claim 21, wherein:

the configuration data associates the network type with a hierarchy of connectors; and

designing the communication network further comprises assigning subordinate connectors to a connection according to the configuration data associated with the network type.

20 27. The network modeling software of Claim 21, further operable to perform the step of validating the communication network to ensure compliance with the rules associated with the network type according to the configuration data.

25 28. The network modeling software of Claim 21, further operable to perform the step of provisioning some of the communication network by communicating instructions to some components.

29. The network modeling software of Claim 21, wherein designing the communication network further comprises interfacing software instructions for modeling a generic communication network with configuration data for specific types of networks.

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30. The network modeling software of Claim 21, wherein the configuration data associates the components with component properties and associates the connections with connection properties.

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31. A system for modeling communication networks, comprising:  
a memory operable to store first configuration data for a first network type and  
second configuration data for a second network type; and

5       a processing module coupled to the memory and operable to determine  
whether a first mode operation corresponding to the first network type is activated and  
to model a communication network of the first network type using the first  
configuration data if the first mode of operation is activated, the processing module  
further operable to determine whether a second mode of operation corresponding to  
the second network type is activated and to model a communication network of the  
10      second network type using the second configuration data if the second mode of  
operation is activated.

32. The system of Claim 31, wherein:  
the first configuration data describes components and connections that may be  
15      included in the communication network of the first network type and rules for  
connecting the components using the connections; and  
the processing module allows a user to design the communication network of  
the first network type using the components and connections according to the rules.

20      33. The system of Claim 31, wherein the processing module models the  
communication network of the first network type by creating nodes to represent  
components of the first network type and creating connection lines to represent  
connections between the components according to the first configuration data.

34. A method for modeling communication networks, comprising:  
storing first configuration data for a first network type;  
storing second configuration data for a second network type;  
determining whether a first mode operation corresponding to the first network

5 type is activated;

modeling a communication network of the first network type using the first configuration data if the first mode of operation is activated;

determine whether a second mode of operation corresponding to the second network type is activated; and

10 modeling a communication network of the second network type using the second configuration data if the second mode of operation is activated.

35. The method of Claim 34, wherein:

15 the first configuration data describes components and connections that may be included the communication network of the first network type and rules for connecting the components using the connections; and

modeling the communication network of the first type further comprises using the components and connections according to the rules.

20 36. The method of Claim 34, wherein modeling the communication network of the first network type further comprises displaying nodes to represent components of the first network type and connection lines to represent connections between the components according to the first configuration data.

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